

WHAT IS CLAIMED IS:

1. A flashlight comprising:

a) a barrel, the barrel being for mounting batteries, a lamp, a switch, a circuit, the switch being for opening and closing the circuit, the circuit being between the batteries and the lamp,

b) a lens,

c) a cap for the barrel; and

d) a pistol grip handle extending transversely from the barrel.

2. A flashlight as claimed in claim 1 wherein the handle includes a mounting for a trigger, the trigger including magnetic means being operable to activate the switch through a wall of the barrel, and the switch being contained inside the barrel.

3. A flashlight as claimed in claim 1 wherein the barrel has a forward end and a rear end, and the handle engages the barrel at a position substantially midway between the forward end and the rear end.

4. A flashlight as claimed in claim 1 wherein the barrel is substantially partially egg-shaped from the forward end to the rear end, and the forward end being substantially truncated and being for receiving the cap.

5. A flashlight as claimed in claim 4 wherein the truncation effectively creates a half-egg shape.

6. A flashlight as claimed in claim 2 wherein the trigger is mounted in a housing, the housing being removably located in a receptacle, and the housing being capable of being selectively removed from the receptacle.

7. A flashlight is claimed in claim 6 including locking means on the handle, the locking means being a slidable element mounted in the handle for movement towards and away from the housing of the trigger, and when moved in a position towards the housing of the trigger acts to lock the trigger in one position and thereby promote containing the housing in a

receptacle in the handle and wherein movement of the slidable element from the position engaging the trigger acts to permit the trigger to move between on and off positions.

8. A flashlight as claimed in claim 2 wherein the trigger is contained in a housing, and the housing is at least partly retained in position in a receptacle in the handle by the cap.

9. A flashlight as claimed in claim 1 including a gasket between the cap and the barrel, the gasket permitting a watertight seal to be formed between the barrel, the gasket, the cap and a transparent face mounted with the cap.

10. A flashlight as claimed in claim 1 wherein the lens includes a reflective surface, the reflective surface being substantially parabolic with multiple protrusions arranged on the reflective surface.

11. A flashlight as claimed in claim 10 wherein the multiple protrusions are substantially hemispherical protrusions arranged around the reflective surface.

12. A flashlight as claimed in claim 11 wherein the protrusions are arranged in rows from a base of the parabolic reflector towards the edge of the parabolic reflector, there being multiple protrusions in each row.

13. A flashlight as claimed in claim 12 wherein successive rows are offset relative to protrusions in adjacent rows.

14. A flashlight as claimed in claim 13 wherein the protrusions substantially adjacent to the base of the parabolic reflector are relatively smaller than the size of the protrusions towards the edge of the parabolic reflector.

15. A flashlight as claimed in claim 14 wherein the spacing between the protrusions in each row is between about  $3^\circ$  to  $10^\circ$  in a radial axis, the axis being directed through the base of the parabolic reflector.

16. A flashlight as claimed in claim 15 wherein the spacing of the protrusions is about  $6^\circ$  in a radial direction around the axis.

17. A flashlight as claimed in claim 12 wherein each row of protrusions is offset from an adjacent row, the offset being radially determined between about 1° and 10°.

18. A flashlight as claimed in claim 17 wherein the offset is about 3°.

19. A flashlight as claimed in claim 10 wherein the protrusions are substantially hemispherical formations and the diameter of the hemispheres at the area towards the edge of the reflector is greater than the diameter of the hemispheres toward the base of the parabolic reflector.

20. A flashlight as claimed in claim 19 wherein the diameter of the hemispheres toward the edge of the reflector is about 0.04 inches and the diameter toward the base is about 0.02 inches and the hemispheres between the base and the edge are incrementally different sizes increasing from the base toward the edge.

21. A flashlight as claimed in claim 10 wherein there are about 1,260 hemispheres arranged in about 21 rows from the base of the parabolic reflector toward the edge.

22. A flashlight as claimed in claim 10 wherein the lamp includes a filament, the filament being located substantially at the vertex of the parabolic reflector and wherein the array of protrusions on the reflector surface is adapted to disperse a fraction of light intensity into a relatively conical pattern of light, the dispersion resulting into a relatively larger diameter of light pattern emanating from the lamp.

23. A flashlight as claimed in claim 10 wherein the size and density of the protrusions on the parabolic surface is selected to control the fraction of concentrated light emanating from the lamp and reflected by the parabolic surface and transformed into dispersed light of larger diameter.

24. A flashlight as claimed in claim 10 wherein the size and density of the protrusions on the reflective surface of the lens are selected thereby to create a substantially consistent light intensity through the area of increased diameter pattern, the increased diameter pattern being

outside of the center column of higher intensity light reflected by the parabolic effect of the reflector.

25. A flashlight as claimed in claim 1 wherein the lens includes a reflective surface, the reflective surface being substantially parabolic, and wherein a texture is applied to the reflective surface of the parabolic lens, the texture acting to blend a column of light normally reflected by a lamp located at the vertex of the parabolic reflector and dispersed patterns of light obtained by reflections from protrusions on the reflective surface, the blending acting to reduce a visual irregularity caused by at least one of an unsymmetrical filament in a lamp, an imperfect filament location relative to a vertex of the parabolic reflector, or imperfections in a shape of the reflector.

26. A flashlight as claimed in claim 1 including batteries, and wherein the batteries are mounted in a housing, the housing being removable from the barrel when the cap is removed from the barrel.

27. A flashlight as claimed in claim 26 wherein the housing is a substantially cylindrical element for mounting multiple batteries in an axial relationship around the axis of the housing.

28. A flashlight as claimed in claim 27 including contacts external to the housing for mounting batteries on an outside wall of the housing.

29. A flashlight as claimed in claim 28 wherein the outside wall is the base of the housing.

30. A flashlight as claimed in claim 26 including a closure to the housing, the closure to the housing including means for mounting the lamp.

31. A flashlight as claimed in claim 26 wherein the closure is mounted to close the housing in a tongue and groove manner, the closure and opening being effected by relative rotation of the closure member on one end of the housing.

32. A flashlight as claimed in claim 26, including a mounting for a switch and circuit on an outside wall of the housing.

33. A flashlight as claimed in claim 32 wherein the switch includes a reed switch operable by the trigger on the handle.

34. A flashlight as claimed in claim 1, including batteries, and wherein the batteries are rechargeable.

35. A flashlight as claimed in claim 26 wherein the housing includes the electrical components for the batteries, the batteries and whereby the operation of the flashlight by the switch is effected by an element mounted on the flashlight unassociated with the housing.

36. A flashlight as claimed in claim 1, including batteries, and wherein the batteries are located in the barrel in a manner to relatively maximize the battery power and minimize the amount of unused space in the barrel.

37. A flashlight as claimed in claim 1 wherein the handle and barrel are ergonomically structured to promote a balance in the flashlight thereby to substantially balance the flashlight with eight batteries mounted in the barrel to enable the flashlight to stand on a base of the handle without tipping forward or backward.

38. A flashlight as claimed in claim 37 wherein the handle is formed of elements cut out from structure forming the handle so as to enhance lightness of the handle while at the same time retaining the structural strength of the handle.

39. A flashlight as claimed in claim 38 wherein the handle includes two component materials, a relatively more rigid forward material to be gripped by fingers of a user and a relatively less flexible material for location about the base of a hand of a user when the hand of a user surrounds the handle.

40. A flashlight comprising:

a) a barrel, the barrel being for mounting batteries, a lamp, a switch, a circuit, the switch being for opening and closing the circuit, the circuit being between the batteries and the lamp,

b) a lens,

c) a cap for the barrel, and

d) a trigger, the trigger including magnetic means being operable to activate the switch through a wall of the barrel, and the switch being contained inside the barrel.

41. A flashlight of claim 40 wherein the trigger is mounted in a housing, the housing being removably located in a receptacle, and the housing being capable of being selectively removed from the receptacle.

42. A flashlight comprising:

a) a barrel, the barrel being for mounting batteries, a lamp, a switch, a circuit, the switch being for opening and closing the circuit, the circuit being between the batteries and the lamp,

b) a lens for the barrel; and

c) a reflective surface, the reflective surface being substantially parabolic with multiple irregularities arranged on the reflective surface.

43. A flashlight as claimed in claim 42 wherein the multiple irregularities are substantially hemispherical protrusions arranged around the reflective surface.

44. A flashlight as claimed in claim 42 wherein the irregularities are arranged in rows from a base of the parabolic reflector towards the edge of the parabolic reflector, there being multiple protrusions in each row.

45. A flashlight as claimed in claim 44 wherein successive rows are offset relative to irregularities in adjacent rows.

46. A flashlight as claimed in claim 42 wherein the irregularities substantially adjacent to the base of the parabolic reflector are relatively smaller than the size of the protrusions towards the edge of the parabolic reflector.